

**Automation of a westerly heading for turboprops aircraft departing SEA in north flow**  
**Preliminary Environmental Analysis**

On July 26<sup>th</sup> 2016, the Letter of Agreement (LOA) between the Sea-Tac Airport Air Traffic Control Tower (SEA ATCT) and the Seattle Terminal Radar Control (S46) was amended to include a paragraph directing turboprops in north flow to establish a heading of 250 within 1 Nautical Mile (NM) of the runway departure end. This allowed these slower moving turboprop aircraft to quickly and safely move out of the way of the faster moving jet aircraft when SEA is in North Flow. This paragraph was effectively removed from the SEA ATCT-S46 LOA in March 2017.

The FAA is undertaking an environmental review under the National Environmental Policy Act (NEPA) for the proposed reinstatement of this removed paragraph (“Proposed Action”). The results of that analysis, in comparison with not reinstating the paragraph (“No Action”), are summarized in this document.

The FAA is providing this information to solicit feedback and to provide an opportunity for alternative proposals to be suggested that would still allow these turboprops to be separated from the flow of jet traffic when SEA is in North Flow.

**Environmental Analysis:**

The FAA implements NEPA through its Order 1050.1F, “*Environmental Impacts: Policies and Procedures*”. Listed within Order 1050.1F, are sixteen environmental impact categories that a Federal Action may affect. These are listed in Table 1 below.

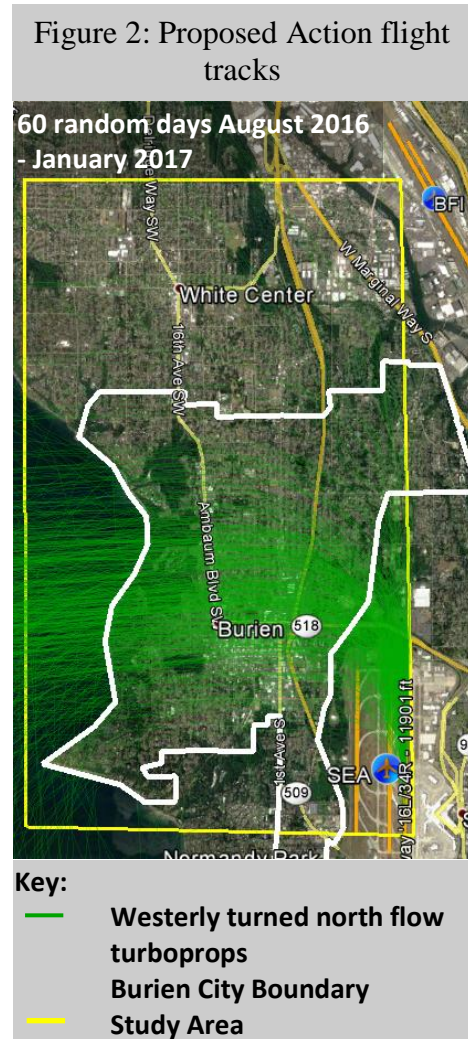
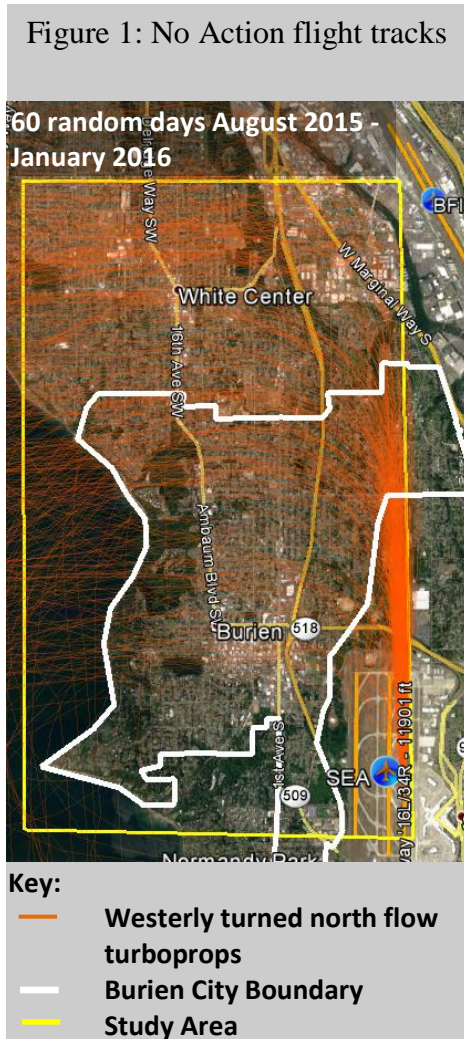
The Proposed Action was analyzed to investigate if any of the listed environmental impact categories would be significantly impacted within a Study Area. This Study area, as well as the flight tracks with the No Action and the Propose Action alternatives is illustrated in Figures 1 and 2 below.

Table 1: List of Environmental Impact Categories in FAA Order 10501.1F

	Environmental Impact Category
1	Air Quality
2	Biological Resources
3	Climate
4	Coastal Resources
5	Department of Transportation Act, Section 4(f)
	Environmental Impact Category
6	Farmlands
7	Hazardous Materials, Solid Waste, and Pollution Prevention
8	Historical, Architectural, Archeological and Cultural Resources
9	Land Use
10	Natural Resources and Energy Supply

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	Environmental Impact Category
11	Noise and Noise-Compatible Land Use
12	Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks
13	Visual Effects
14	Water Resources
15	Cumulative Impacts
16	Irreversible and Irrecoverable Commitment of Resources



Given that the proposed reinstatement of the paragraph (“Proposed Action”) does not involve ground disturbance, many of these impact categories would only be affected, if at all, as a result of noise and air quality impacts generated by the implementation of the Proposed Action.

#### Air Quality and Climate Impact Analysis

It is not reasonably expected that the Proposed Action would change the number of turboprop aircraft which are directed to the west. Since the number and type of aircraft

flying within area immediately to the west of SEA is not expected to change, there would be no significant air quality impacts as a result of the implementation of the Proposed Action.

#### Noise Impact Analysis

To further investigate the effect of noise resulting from the implementation of the Proposed Action on the impact categories, the FAA undertook a noise screen of the flight pattern associated with the inclusion of the aforementioned paragraph. This noise screen was undertaken using an FAA computer-based noise screening tool, the Terminal Area Route Generation, Evaluation, and Traffic Simulation (TARGETS) Aviation Environmental Design Tool (AEDT) Plug-in. This Plug-in is one of the approved aircraft noise screening tools per the FAA Order 10501.1F.

As per the FAA Order 1050.1F, for air traffic airspace and procedure actions, analysis is normally conducted to identify if (and where) noise will change by the following specified amounts:

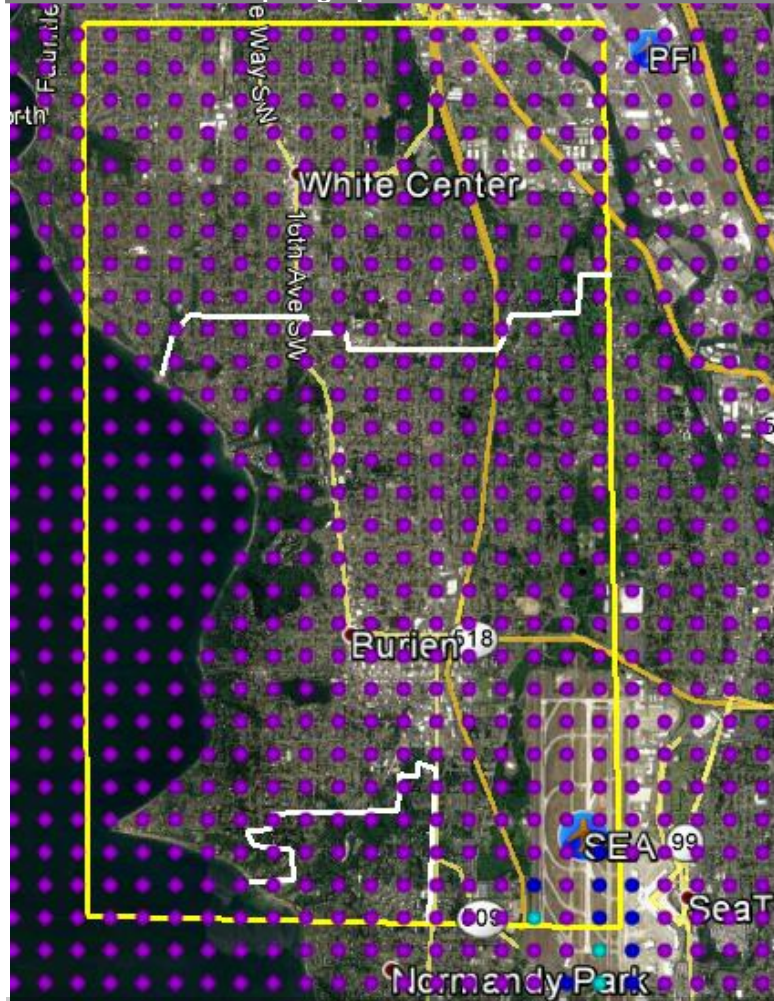
- a) For DNL 65 dB and higher: +1.5 dBA
- b) For DNL 60 dB to <65 dB: +3 dBA
- c) For DNL 45 dB to <60 dB: +5 dBA

Where (a) is a significant noise increase, and both (b) and (c) are reportable noise increases.

The result of this noise screen, shown in Tables 2 - 4 below, shows that there are no reportable or significant noise impacts as a result of the implementation of the Proposed Action. Furthermore, as indicated in Figures 3 and 4, except in the immediate vicinity of SEA, both flight patterns result in a noise environment of less than 45 dBA DNL. This is well below any FAA threshold that would trigger further environmental consideration.



Figure 3: Noise Exposure Due to Flight Paths without the paragraph in the LOA



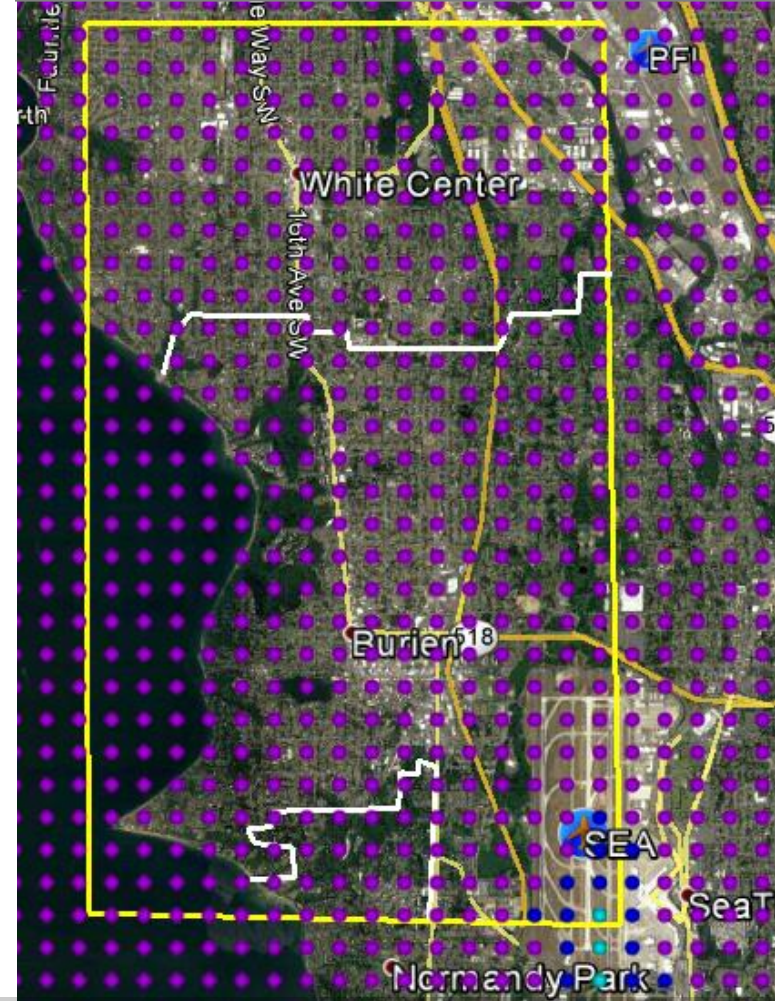
Key

- City boundaries within the Study Area
- 45 dBA ≤ Noise < 50 dBA

- Study Area
- 50 dBA ≤ Noise < 55 dBA

- Noise < 45 dBA
- 55 dBA ≤ Noise < 60 dBA

Figure 4: Noise Exposure Due to Flight Paths with the paragraph in the LOA



<b>Table 2: Noise Exposure Due to Flight Paths without the paragraph in the LOA/dBA DNL</b>					
Percentage of grid points at:					
65+dB	65-60dB	60-55dB	55-50db	50-45dB	<45dB
0	0	0	0.1	0.5	99.4

<b>Table 3: Noise Exposure Due to Flight Paths with the paragraph in the LOA/dBA DNL</b>					
Percentage of grid points at:					
<b>65+dB</b>	<b>% 65-60dB</b>	<b>% 60-55dB</b>	<b>% 55-50db</b>	<b>% 50-45dB</b>	<b>% &lt;45dB</b>
0	0	0	0.2	0.7	99.1

<b>Table 4: Impact</b>						
Percentage of grid points at:						
<b>Increase</b>			<b>No Change</b>	<b>Decrease</b>		
<b>≥ 1.5dBA increase at or greater than 65 dBA DNL</b>	<b>≥ 3dBA increase between 60 - 65 dBA DNL</b>	<b>≥ 5dBA increase between 45 - 60 dBA DNL</b>		<b>≥ 5dBA decrease between 45 - 60 dBA DNL</b>	<b>≥ 3dBA decrease between 60 - 65 dBA DNL</b>	<b>≥ 1.5dBA decrease at or greater than 65 dBA DNL</b>
0	0	0	100%	0	0	0

**Preliminary Determinations:**

As a result of this noise and air quality analysis results, the FAA has made the following preliminary determinations to those environmental impact categories which may be affected by the Proposed Action:

**Department of Transportation Act, Section 4(f)**

As listed below in Table 5, there are 35 public parks within the Study Area. These parks have multiple uses from containing play structures, to walking trails. Some of these parks are described as being located in a quiet setting within urban areas. There are also two golf courses, both located between SEA and Boeing Field Airport (BFI) and one lake, which is potentially used as a recreation area within the Study Area. The aircraft flight track changes resulting from the July 26<sup>th</sup> 2016 LOA indicates that there will likely be more air traffic over these noise sensitive resources as a result of the Proposed Action. However, the noise results show that, except in the immediate vicinity of SEA, both the Proposed Action alternative and the alternative without the reinstatement of the LOA (“No Action Alternative”) produce noise environments that fall below 45 dBA DNL. The noise analysis further shows that there will be no significant or reportable noise changes as a result of the implementation of the Proposed Action. As a result of this noise and air quality analysis results, the FAA has preliminarily determined that there would be no constructive use under DOT Act Section 4(f) of any eligible property and that no further coordination is necessary.

**Table 5: Public Parks within the Study Area**

	<b>Public Park</b>		<b>Public Park</b>
1	Moshier Memorial Park	18	Oxbow Park
2	Burien Town Square Park	19	West Duwamish Greenbelt Puget Park
3	Eagle Landing Park	20	Riverview Playfield
4	Lake Burien School Memorial Park	21	Pudget Ridge Playground
5	Dottie Harper Park	22	High Point Community Center
6	Sunset Park	23	High Point Commons Park
7	North SeaTac Park	24	Morgan Junction Park
8	Chelsea Park	25	Orchard Street Ravine
9	Ed Munro Seahurst Park	26	Solstice Park
10	Salmon Creek Ravine Park	27	South Park
11	Lakewood Park	28	Cesar Chavez Park
12	Steve Cox Memorial Park	29	Dumaish Waterway Park
13	Park Lake Day Camp	30	Watercrest Park
14	Shorewood Park	31	Highland Park Playground
15	Seola Park	32	E.C Hughes Playground
16	Arroyos Natural Area	33	Kilbourne Park
17	Ruby Chow Park	34	Fauntleroy Park

### Historical, Architectural, Archeological and Cultural Resources

As listed in Table 6, there are two properties listed on the National Register of Historic Places (NRHP) and six properties which are eligible for listing on the NRHP within the Study Area.

**Table 6: Places on the NRHP, and places eligible<sup>4</sup> for listing on the NRHP within the APE**

		Property Name	Address	Resource ID
National Register; Washington Heritage Register	1	White Center Fieldhouse and Caretaker Cottage	1321 SW 102nd Street, Seattle, WA	674769
	2	14th Avenue South Bridge - Seattle	Spans Duwamish River, Seattle, WA	675190
Eligible	3	St. James Lutheran Church	9403 18th Ave SW, Seattle, WA 98106	41529
	4	South Park Firehouse	8201 10th Ave S, (South Park), Seattle, WA	35527
	5	Boeing Primary Building	7775 E Marginal Way S, Tukwila, WA 98108	46715
	6	14th Avenue South Brick Road	14th Ave S, Seattle, WA 98108	46718
	7	Beverly Park Tank	11044 4th Ave SW, White Center, WA	622399
	8	YMCA - Burien	17874 Des Moines Memorial Dr S, Burien, WA	618817

<sup>4</sup> <https://fortress.wa.gov/dahp/wisaardp3/>

The primary basis for determining adverse effects on historic and cultural resources is the degree of increase in aircraft noise exposure level as a result of the Proposed Action. Based on the noise results, the FAA made a determination of “No Adverse Effect” on all properties listed or eligible to be listed on the National Register of Historic Properties (NRHP). On May 4<sup>th</sup> 2017, the FAA wrote to the Washington State Historic Preservation Officer (SHPO), detailing the Proposed Action and requesting concurrence with its “No Adverse Effect” determination. That letter may be found [here](#). On May 10<sup>th</sup> 2017, the SHPO responded, concurring with the FAA’s determination. That response may be found [here](#).

### Land Use

According to the City of Burien zoning map, effective January 5<sup>th</sup> 2016<sup>1</sup>, the portion of the City of Burien within the Study Area consists of residential, neighborhood centers, office, commercial, industrial as well as professional/residential land use. Other than residential homes, this area includes multiple public parks, schools and places of worship. According to the FAA’s Land Use Compatibility guidelines, these types of land use are all compatible with the noise projected to result from the Proposed Action.

<sup>1</sup> <http://www.burienwa.gov/DocumentCenter/Home/View/665>



### Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks

Figures 5 and 6 shows the areas in which Environmental Justice (EJ) may be a concern within the Study Area. This data was pulled using the U.S Consensus 2015 data, through the Environmental Justice tool in AEDT. There are multiple areas of which exceed environmental justice thresholds within the Study Area. However, there are no reportable or significant noise impacts and the noise level of the No Action and Proposed Action Alternatives are less than 45 dBA DNL. Furthermore, there is no change to air quality. Therefore, the FAA has preliminarily determined that there are no high and disproportionate impacts to environmental justice communities.

Figure 5: EJ areas with the No Action flight tracks

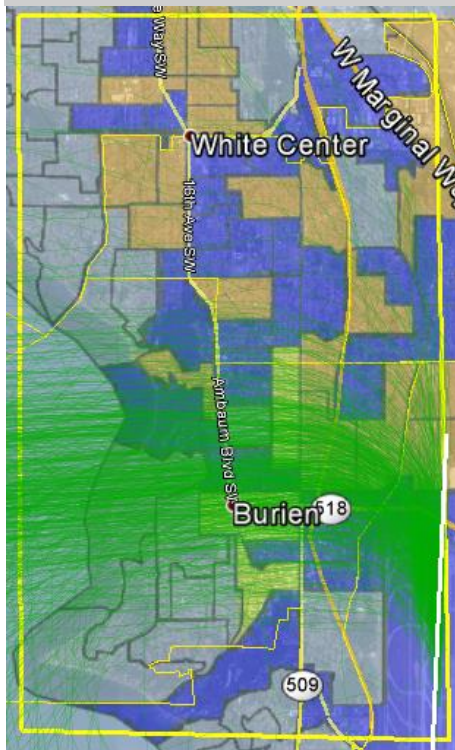
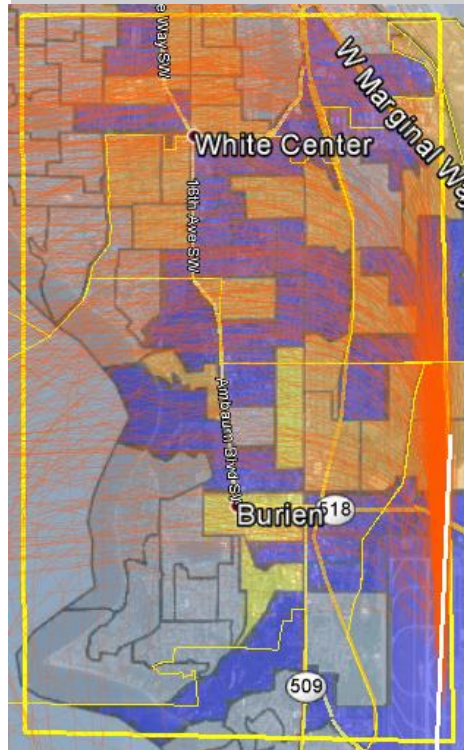


Figure 6: EJ areas with the Proposed Action flight tracks



#### Key

- No Environmental Justice threshold exceeded
- Exceeds the 1 x poverty threshold level
- Exceeds the for minority threshold
- Exceeds both the 1 x poverty and minority thresholds
- Study Area
- No Action flight tracks
- Proposed Action flight tracks

The aforementioned analysis preliminarily indicates that there would be no direct or indirect or cumulative significant impact as a result of the implementation of the Proposed Action.



Furthermore, the FAA has preliminarily determined that the Proposed Action does not conflict with communities' plans and that there would be no irreversible and irretrievable commitment of resources. Given the nature of the Proposed Action, there are no impacts to the remaining environmental impact categories.

The FAA kindly requests your comments to ensure that our determination is well informed and alternative proposals, if any, no later than June 21<sup>st</sup> 2017.